DOCUMENT RESUME

ED 085 608 CG 008 384

AUTHOR Holmgren, Carl A.
TITLE An Assessment of the Possible Relationship of the Practice of Meditation to Increases in Attentiveness to Learning.
PUB DATE Dec 72
NOTE 46p.

EDRS PRICE MF-$0.65 HC-$3.29
DESCRIPTORS Achievement; *Attention Control; Empathy; Grade 7; Junior High School Students; *Learning; *Learning Activities; Listening Skills; Personal Growth; *Program Evaluation; Research Projects; *Self Actualization; Teacher Education
IDENTIFIERS *Meditation

ABSTRACT

A group of 24 seventh-grade students was involved in a meditation (zen) experience as a means of assessing the relationship of meditation to learning. Using a simple rote memory task as both a pre-test and a post-test the experimental group (N=16) showed a significant increase (.01) in the number of objects recalled, whereas with the control group no significant increase occured. This suggests that meditation, which leads to greater self-awareness, facilitates greater attentiveness to learning. However, on a second post-test given six months after the meditation experience had ended, no significant increases were noted between the post-tests of either group. The experimental group, though, had not continued the meditation practice after termination of the program suggesting the process had not been fully internalized during the time they had been involved in the actual meditation experience. (Author)

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AN ASSESSMENT OF THE POSSIBLE RELATIONSHIP OF THE PRACTICE OF MEDITATION TO INCREASES IN ATTENTIVENESS TO LEARNING

By Carl A. Holmgren

A Problems Paper for Curriculum & Instruction 5911

Clinical Experiences in Curriculum Development

Submitted to Professor Glen White

Mankato State College

December, 1972

CS 008 384

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INTRODUCTION

In the past few years a number of articles have been written on the effects or benefits of meditation, zazen and T.M. (Transcendental Meditation). Enough has been written to suggest that meditation may be positively related to increases in learning. Why this may be true is perhaps a matter of conjecture. It may be because meditation increases self-awareness, self-understanding. And, it seems plausible that self-awareness and self-understanding, on the one hand, reduce anxiety and, on the other, increase self-acceptance - both of which are necessary for esteem needs (achievement and accomplishment) to be met. It is one thing, though, to make this kind of a statement concerning meditation. It is quite another thing to bridge the gap between the practice of meditation and actual increases in learning. The study contained herein will attempt to bridge that gap.

By way of personal background, in 1969 I returned to the U.S. from Japan where I had lived for about 7½ years. My last three years in Japan had been spent developing a guidance program in a private Japanese junior and senior high school and training two Japanese as counselors. Upon returning to the U.S., I began working as a counselor in the Junior High School in orthfield, Minnesota. My first year in this position was an extremely difficult one, not merely because of the cultural shock I experienced in relation to adapting back into my native environment, but primarily because of the radical differences I faced between Japanese secondary education (which I knew) and American secondary education (which over a 12-year period I had forgotten).

The Japanese pattern of education was built around the teacher as an imparter of knowledge, as sensei ("honoured teacher," which conveys both prestige and rank), in a classroom setting of 50 students to a room for each subject and each grade, 7-12, all of the students sitting in rows, facing the front of the classroom, listening to the teacher, questioning only to the extent of gaining information (as opposed to clarification or to challenge assumptions).

My graduate experience at the University of Minnesota, in 1965 and in 1966, in Educational Psychology, led me to believe American education was concerned with individual differences and with creating a meaningful learning environment. My actual experince in American education, however, after I returned to the U.S. in 1969, contradicted this. To be sure, I heard some of the same kinds of things I had heard in 1965 and 1966. Moreover, I found the physical makeup of the classrooms were different from that which I had seen in Japan - class sizes were much smaller, in many rooms there was flexibility in placement of chairs and desks, and there was an abundance of audio-visual materials. It was in the area of teacher attitudes, though, where I found the real contradiction existed.

In Japan, teachers simply said they didn't believe in individualizing instruction, nor could they accept a role model in which there was equality between student and teacher. But, at least one knew where they stood. Here in the U.S., however, it was the discrepancy between what teachers said and what they practised that both confused and frustrated me. It is difficult to question the practice of someone who claims he believes basically as you do.

Over the last three and a half years, though, I have become increasingly aware that many teachers would like to be involved in a more viable teaching experience, but they don't know how; and thus in their frustration they revert to behavior that had been modeled for them by their own teachers. The crucial element, that of being helped to become whole persons, has been, for the most part, left out in teacher training.

This past summer I returned to Japan for a brief visit. During the time I was there, several of my Japanese friends expressed for the first time a real sense of frustration as they indicated they are no longer able by their position as sensei to motivate students to learn. This was in sharp contrast with both my understanding and my experience of Japanese education in the past.

This past fall, at the Junior High here in Northfield, I was made aware of a similar frustration. Teachers who I felt were sensitive, concerned, and who liked "kids," openly talked of their discouragement because students refused to learn.

A good question at this point is "what's happened?" Postman and Weingartner, in describing contemporary education, reflect:

> It is as if we are driving a multimillion dollar sports car, screaming, "Faster! Faster!" while peering fixedly into the rear view mirror. It is an awkward way to try to tell where we are, much less where we are going, and it has been sheer dumb luck that we have not smashed ourselves to bits - so far. We have paid almost exclusive attention to the car, equipping it with all sorts of fantastic gadgets and an engine that will propel it at ever increasing speeds, but we seem to have forgotten where we wanted to go in it. Obviously, we are in for a helluva jolt. The question is not wither, but when (1971, xiii).

From my own perspective, I believe we have been putting the emphasis in the wrong place. While we have been busy manipulating the student's external environment, we have forgotten him, the student. We have forgotten his perception of reality: his need to be

able to explore adequately and to experience wholly his emerging conception, not only of the world about him, but of reality itself.

It is within this framework the present paper, including the study it describes, has been written.

The first chapter will lay the groundwork for the subsequent chapters. Entitled "Generative Factors," it will explore elements relating to the adolescent period, coping mechanisms that begin to increase sharply during this period, and factors that are crucial to successful learning during this period. The second and succeeding chapters will generally fit within the accepted pattern of most research studies.

Chapter One

GENERATIVE FACTORS

In order to better understand how the study in question had its genesis, it will be helpful in this chapter to look at three factors that command the attention of educators, particularly during the junior high school period: the nature of the adolescent period; coping mechanisms and their relation to low self-esteem; and learning as a function of self-exploration, self-discovery.

The Nature of the Adolescent Period

Typically, in terms of physical growth and development, students entering the seventh grade are children. When they leave ninth grade, they are adults. The interval in between encompasses the growth period seen as the onset of puberty. Parents and teachers, alike, will attest to another facet of this period, that of the psychological growth and development, as the stresses, the storms, the conflicts of this period are quite visible. Erik Erikson has appropriately referred to this stage in the development of an individual as that of the "identity crisis." Those in adolescence begin taking on a world view, coming to the place where they "can now think about other people's thinking and wonder what other people think of them" (Elkind: 1970, April 5). Elkind cites Erikson further as viewing the adolescent period in this way:

> the new interpersonal dimension which emerges during this period has to do with a sense of ego identity at the positive end and a sense of role confusion at the negative end. That is to say, given the adolescent's newfound integrative abilities, his task is to bring together all of the things he has learned about himself as a son, a student, athlete, friend, Scout, newspaper boy, and so on, and integrate these different images of himself into a whole that makes sense and shows continuity with the past while preparing for the future. To

> the extent that the young person succeeds in this endeavor, he arrives at a sense of psychosocial identity, a sense of who he is, where he has been and where he is going (1970, April 5).

Moreover, Erikson sees this period as one in which the adolescent "is so eager to be affirmed by his peers, to be confirmed by teachers, and to be inspired by worthwhile 'ways of life'"(1968, 130)..If, on the other hand, the adolescent feels

> that the environment tries to deprive him too radically of all the forms of expression which permit him to develop and integrate the next step, he may resist with the wild strength encountered in animals who are suddenly forced to defend their lives. For, indeed, in the social jungle of human existance there is no feeling of being alive without a sense of identity (Erikson: 1968, 130).

Obviously, the level of self-esteem a young person has upon entering adolescence will affect this process of gaining a "sense of who he is." It will also influence the way he reacts to his formal learning environment, particularly if he perceives it to be restrictive.

Adolescents, particularly at the seventh and eighth grade levels, are almost brutal in their treatment of their peers. Both their verbal and non-verbal "put-downs" as well as their masking of their own feelings in peer-group encounters support the reality of the upheaval they experience in varying degrees during this period. And, it suggests their self-esteem needs enhancement.

Coping Mechanisms and Their Relation to Low Self-Esteem

Where self-esteem is low or in a state of turbulence, there is a tendancy to focus upon things, people, events outside the self in order to avoid the pain associated with facing one's self. In order to deal, thus, with an inadequate self-concept,

coping mechanisms such as drugs, smoking, sex, alcohol, physical aggression, religion, compulsive acquisition of material goods, and so forth, are utilized.

Perhaps the appropriate analogy might be that of the wheel, where the hub is the self, and the spokes are the various coping mechanisms used to flee out to the rim where one hopes to escape the feelings of inadequacy. Because the coping mechanisms are "out there," that is, are overt behavioral responses that catch our attention, we tend to focus on them rather than to deal with the self, the source of the problem. It is kind of like putting buckets all over the floor to catch water leaking from the roof rather than repairing or replacing the roof.

For a long time we as a culture were not aware of either the meaning or, nor the implications of, feelings of inadequacy with respect to self-esteem. Thus, our failure to deal with this problem stemmed more from ignorance than anything else. Today, this is no longer true. Our problems with respect to increasing self-esteem reflect more our uncertainty as to how to go about it.

Learning as a Function of Self-Exploration, Self-Discovery

I see my existance as a lifelong search, as an attempt to discover who I am, to gain insight into the self and beyond the self, to whatever for me will constitute ultimate reality. Thus, one of the main functions of education ought to be that of creating an environment that allows students to discover more about themselves, that provides them the opportunity to gain greater insight into just who they are. For as C.G. Jung said, "My own understanding is the sole treasure I possess and the greatest. Though infi-

nitely small and fragile in comparison with the powers of darkness, it is still a light, my only light" (1963, 88).

As public school education currently exists, however, many educators perceive themselves as "imparters," where they view their role as that of somehow "adding on" to the student, like frosting a cake, as though he were not complete in himself. Anthony Abbott, however, says that "It is not nor has it ever been the primary function of the teacher to impart knowledge; books and computors can do that kind of thing a great deal more accurately and a great deal more quickly" (1972, Summer). From another source, Krishnamurti states "Teaching is not the mere imparting of information but the cultivation of an inquiring mind" (1963, 14). And, in a much stronger vein, Postman and Weingartner protest that it is "insane... for a teacher to 'teach' something unless his students require it for some identifiable and important purpose, which is to say, for some purpose that is related to the life of the learner" (1971, 42).

It would seem reasonable to suggest, then, that this model of the imparter, rather than enhancing self-awareness, actually limits or stands in the way of self-discovery and thus learning; the reason being that the acquisition of information and not self-understanding is what is typically reinforced through assessment.

No, the role of the teacher is not basically that of providing information. Rather, it is "to liberate the student. For both this means love, sacrifice, and the sharing of experience that goes beyond either of their personalities... true learning can never come from reading or theorizing, but only from experience" (Hess: 1971, December 18).

From another perspective, Carl Rogers (in viewing education of the future) believes that learning "will not be a preparation for living. It will be, in itself, an experience in living" (1968, Jul/Aug/Sep, 274). As to the student, Rogers reflects further "His will be an education in becoming a whole human being" (1968, Jul/Aug/Sep, 275). This, however, is a "very personal matter. It has to do with the discovery of meaning... (and thus) we have to pay attention to the personal problem, the affective, personal discovery question, the problem of relevance" (Combs: 1971, Dec, 25). The tragedy, though, is that for the most part the "personal discovery question" is foreign to contemporary education. And thus, Peter Schrag asks: "What choice does a fifteen year old (or a 14, 13, 12 year old?) have in the average high school? Choices as to courses, teachers, or physical presence? What does he actually do most of the day? He sits and, maybe, listens... it is a world all of its own and it is mostly about nothing" (1970, Sep 19).

If, on the other hand, educators were to view themselves as "enablers," operating with the philosophy "I have nothing to teach. I can only help you to discover yourself" (where the appropriate analogy might be that of "unpeeling the banana"), the effect might be the enhancement of the formal learning process. Is it unreasonable to suggest that increased self-knowledge would result in greater attentiveness to learning?

While we are very quick in the United States to talk about individualizing instruction, about needing to involve the student more in structuring his own learning environment, very few of us are at the place in our own personal growth and development where we can afford to take the risks involved. It takes a great

deal of trust in religion, for example, for a minister to allow his parishioners to "work out their own salvation," for that which may come to constitute ultimate reality for them may have resulted from pathways dissimilar to his own. It takes a great deal of trust for a doctor to accept that his patient plays the key role in both the assessment and the remediation of an illness, for the treatment may not necessarily be what he would have prescribed. And, it takes a great deal of trust for an educator to accept that the student may know best where he is at (because his perceived needs may be radically different from those of his instructor), and that they both explore together what it is he is to set about to learn.

> One cannot give experiences to another; one can only present opportunities for experience and accept what the student does or does not do with them. This is a devastating realization, for it implies relinquishing the long-accepted immense control of the adult over what the child learns - something educators have always, perhaps mistakenly, believed they possessed (Barth: 1972, 49).

This, of course, calls for a unique kind of a person. It calls for an educator who perceives his role as best assisting the student by providing the kind of environment that encourages self-exploration, self-discovery. The most critical question, though, may be how do we go about creating just this kind of an environment that will encourage greater self-awareness? The difficulty we face in trying to understand ourselves lies in the fact that

> there is and can be no self-knowledge based upon theoretical assumption, for the object of self knowledge (which includes the unconscious and its contents) is an individual - a regular exception and an irregular phenomenon. Hence it is not the universal and the regular that characterizes the individual, but rather the unique (Jung: 1957, 9).

Therefore, to know one's self is an uncharted course, a very personal one , for each of us. But by going within the self, we move

closer and closer to that which supports or undergirds us all (which will simply be labeled the "Universal Self"), and that the further I go within is the extent to which I create the possibility of fully understanding you. If, as Barth suggests, "There seems to be some relationship between knowing oneself and self-esteem, and this self-esteem is crucial for learning" (1972, 21), how then does one go about understanding himself? How may he be enabled, facilitated to do this?

The study contained herein concerns itself with the suggestion that meditation (zazen or TM) be a means for establishing the kind of environment that will encourage greater self-exploration. First, though, it would be helpful before looking at this approach to relate the events at the Northfield Junior High which precipitated its use.

Chapter Two

NATURE AND PURPOSE OF PRESENT STUDY

Within this chapter will be a description of experiences in working with a seventh-grade health class during the first semester of the school year 1971-72. Then, a contrasting approach during the third quarter of that same year and its relation to the present study will be cited. Finally, the purpose of the study under consideration will be stated.

The Fall, 1971, Health Classes

During the Spring of 1971, a request was made to the Junior High School administration for an opportunity to work with the seventh-grade students as a part of a regular program during the coming school year, 1971-72. Up until this time it had not been the policy for the school counselors to be involved in a formal teaching situation.

There was a reason for the above request, though. In September, 1970, a whole new world had been opened up to me when I had the opportunity to take a Parent Effectiveness Training program workshop, including a subsequent instructors program in both P.E.T. and Teacher Effectiveness Training. I was so elated with what I found happening within me and within others, as a result of leading two P.E.T. and one T.E.T. classes (following my own training), that I had become something of an "evangelist." The nature of the skill-training program was so unique (to my experience) and so effective that it seemed it could be used with any age and within any group, and thus I decided the seventh-grade was just as good a

place as any to test this out. There had been concern about the peer-group relations at this age level, and it was thought this program might be the answer to some of the problems we were seeing.

When the new school year began, I was assigned the seventh-grade health classes on a twice-a-week basis. During that school year, all students in that grade were required to have a health class five days per week, for a quarter.

Although I felt that what I was working with, in terms of the Effectiveness Training Associates programs, would be too content-centered for this age group and would necessitate students disclosing their own feelings in a class size of 24, in a peer-group setting, which they are exceedingly reluctant to do, I was so enthusiastic about the program I really believed I could overcome these obstacles. For two quarters, with three different classes each quarter, I tried to involve the students in the skill-training program which had been so successful with adults. However, my approach was too content-centered and I couldn't overcome their resistance to disclosing their feelings. The students were bored, and they either tuned out or acted out. I tried everything I could think of in an attempt to find something in the affective domain that would involve them. I used various psychological games, role-playing situations, and skits, but all to no avail. I was so frustrated and discouraged I would like to have dropped the program, but thanks to the inability to change the scheduling I was unable to do this.

This health class program became a hard way of learning by experience something of what Postman and Weingartner were getting at when they said (in discussing the attitudes of the "inquiry

teacher") "he spends more of his time listening to students than talking to them or at them" (1971, 36). What made it even more difficult was that I also began hearing comments, indirectly, such as "How is Carl supposed to be able to help us in our teaching when he can't do it himself?"

Parallel with this experience within school was a real growing experience I was also having with a T.E.T. class in another school district. About half-way through that ten-week course I began facing questions concerning the program to which I found I was merely parroting back T.E.T. program answers. In working through the problem I was forced to come to the place where for the first time the answers were my answers, and the program became my program. I didn't have to defend it or apologize for it. This became a freeing experience.[1] It also helped me to accept the fact that I could no longer expect to succeed (nor needed to!) with the seventh-grade classes.

Shortly after this, near the end of the first semester, I started practising zazen (sitting meditation). My wife had begun zazen about a year earlier, and although I had become aware of a number of things that were happening to her as a result of her practice, I had never thought of meditation as something I would ever be involved with. At the time, I didn't know why I began, nor did I know what to expect from it. I just felt an urge to begin

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[1] I subsequently encountered a truth that not only helped me to see into my relationship to the E.T.A. programs, but also into another personality-shaping event I had had earlier in my life: "one must overcome the initial excitement... For unless one is able to overcome this excitement, one will not be able to learn, because any form of emotional excitement has a blinding effect. One fails to see life as it is because one tends so much to build up one's own version of it" (Trungpa: 1970, 11).

meditating. I do remember, though, hoping it would increase my self-awareness.

The effect of my initial involvement in meditation was to suggest that the students I was working with also had a need to discover more about themselves, and since I was beginning to be wholly absorbed in the idea "I have nothing to teach. I can only help you to discover yourself," I felt an urge to incorporate some of the elements of meditation into the learning environment so that the focus could shift from what I had to give to what the students could set about discovering for themselves. Thus, I set about to change my approach in the health classes for the beginning of the second semester.

The Influence of the Third Quarter Health Class Experiment on the Present Study

During the third quarter, working with small groups of students from the health classes (rather than working with the class as a whole), the idea of meditation was introduced.

As the description of the process involved appropriately falls under the chapter entitled "Procedure," perhaps it will suffice to indicate simply the response to the meditation process was in contrast with that experienced, as described above, during the two preceding quarters. With one exception, as will be noted later, the response was generally satisfactory in terms of the verbal statements made. In some cases the students were pleased, in one case elated.

On the basis of this experience, it was decided to repeat the meditation program during the fourth quarter, only this time it

would be done as a research study.

Statement of Purpose

The study that follows has as its purpose to assess the probable relationship of meditation to increases in attentiveness to learning.

Chapter Three

SURVEY OF RELATED LITERATURE

While a number of articles on meditation have appeared in print, they seem to focus primarily upon either the physiological state that is arrived at during meditation, or upon studies relating to psychological changes occuring through meditation, or upon self-reports made by meditators as to their perception of the effects and/or benefits of meditation upon them.

The writer was unable to find studies, however, directly bearing upon the relation of meditation to increases in learning. Never-the-less, several studies will be cited here as their treatment of the physical and psychological states of the meditator has relevance in relation to a set that is conducive to learning. Additionally, a newspaper article relating reported increases in school grades among meditators will be presented.

1. Wallace, Robert Keith and Benson, Herbert, "The Physiology of Meditation." Scientific American, 1972 (Feb), Vol. 226, No. 1, 84-90.

Wallace and Benson describe their study into the physiological changes that occurred with volunteer subjects during the meditative state. The following changes were noted as a part of a study of 36 subjects whose experience in TM ranged from about one month to nine years:

> reduction in oxygen consumption, carbon dioxide elimination and the rate and volume of respiration; a slight increase in the acidity of the arterial blood; a marked decrease in the blood lactate level; a slowing of the heartbeat; a considerable increase in skin resistance, and an electroencephalogram pattern of intensification of slow alpha waves with occasional theta-wave activity.

The one aspect of their study that is relevant here is the reduction in the blood-lactate level. It has been known that anxiety symptoms have been accompanied by higher blood-lactate levels. Thus, it has been "reasonable to hypothesize that the low level of lactate found in the subjects during and after transcendental meditation may be responsible in part for the meditators thoroughly relaxed state."

2. Goleman, Daniel, "Meditation as Meta-Therapy: Hypotheses Towards a Proposed Fifth State of Consciousness." Journal of Transpersonal Psychology, 1971, No. 1, 1-23.

Goleman enumerates a number of hypotheses concerning meditation in which the meditator moves beyond the typical states of consciousness, i.e., waking, sleeping, and dreaming, into a transcendental fourth state which may be described as "pure consciousness," in which there is "no cognition, no dreaming, no hallucinations, no data input (via normal sensory modalities), no information processing, no conscious activity at all, just full waking attention," and finally into a fifth state of consciousness "which is on the psychophysiological level a function of waking-state and fourth-state psychophysiology, but identical to neither, and which is on the psychological level what Fromm describes as 'enlightenment.'"

Among his sources Goleman reported a lecture by Brown of Stanford in which he discovered a strenuous learning task was "significantly facilitated by practicing TM immediately prior to the training sessions." In that "high anxiety levels inhibit learning ability," this suggests (but only suggests) that the reduced anxiety

experienced through meditation aids mastery of specific learning tasks.

3. Lesh, Terry V., "Zen Meditation and the Development of Empathy in Counselors." Journal of Humanistic Psychology, 1970, Spring, Volume X, No. 1, 39-74.

Lesh worked with a group of 16 counseling students, training them in zazen. He found that on an empathy measure the students performed significantly better than the students who did not meditate. "The more open to experience a person is the more empathetic he seems to be." Lesh concludes "Meditation appears to be an effective means of assisting people in self-actualization."

4. Simak, Clifford D., "Transcendental Meditation: 'It works, but how?'", The Minneapolis Tribune, August 20, 1972.

Reporting on individuals and families who had been practicing TM, Mr. Simak, a staff writer, indicated that among the changes occuring as a result of meditation were those relating to improved grades in school. John Winterer, 18, "who finished high school this spring, never had been on the honor roll in his life... until he began meditation. Since that time he has never been off it." Tom Winterer, 19, a student at the University of Minnesota, "had been doing C and B work until he began to meditate. Now his grades have risen to B and A..." John Gilmore, 18, said that throughout his first two years of high school he was a poor student and had become involved in the drug scene. In July, 1971, he became a meditator and his grades rose from a D to a B average. He also quit using drugs."

Chapter Four

PROCEDURE

This chapter will explicate two basic aspects of the study: the meditation program; and the selection of an appropriate instrument.

The Meditation Program

Within this section will be a description of the procedures used during the third quarter initial experiment, school year 1971-72, and a description of the expansion of those procedures during the fourth quarter research study.

1. Third Quarter Initial Experiment. At the beginning of the third quarter, each of the health classes was divided into three groups. The plan was to work with just one-third of the class (8 students) during each three-week period in the quarter. There would be six sessions with each group.

The first session involved introducing the concept of "listening"[1] as an element that contained more than simply experiencing stimuli external to them. The students were encouraged to explore the possibility of other kinds of "listening," such as becoming aware of their own thoughts, attitudes, ideas, feelings. In using the term "listening," the students were told they had many "teachers," both formal and informal, and they were expect-

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[1] Feeling somewhat uneasy about using the term "meditation" with this age group, I used the term "listening" as it was readily understandable, and it would not create any kind of a block that would interfere with what was being attempted. Moreover, Wienpahl's comments regarding zazen support the appropriateness of the term "listening:" "It is learning to listen. It is learning to accept" (1964, 122).

ed to do all kinds of listening, all day long. "Sometimes," they were told, "you are bombarded so much from the outside you never have a chance just to be in touch with yourselves." And, consistent with my feelings and in an attempt to convey positive feelings of worth, the students were told "It is important for you to discover the greatest teacher you will ever meet - you yourselves. And, to this end we are going to try to listen to ourselves." It was further stated "Each of you is a beautiful person, a unique person, and we are going to provide some experiences we hope will allow that inner beauty to come through, to help you get in touch with your real self."

To get at the idea of the interior self and the extent to which the unconscious influences the self, the analogy of an iceberg (where the major part lies below the surface) was used. As a means by which they might become more aware of the kinds of things that were coming into their consciousness, each group was given five minutes to write down everything that came to them: every word, color, name, idea, feeling, or concept. They were encouraged to do this without blocking. Some of the students expressed surprise at the kind, and in some cases the frequency, of the content that emerged. What the students had written down was neither shared with other members of the class nor with the instructor.

Again, it was indicated to each of the groups that we were going to aim for a better understanding of ourselves, and that just as they had experienced something of themselves through writing down spontaneously what had been emerging into their consciousness, so through the opportunities that would be provided

for them to "listen" to themselves, it was expected these would also help them to discover more about themselves.

It was at this point that we began exploring ways in which this "listening" could take place. Three basic ways were suggested: one, working at some task around school that was somewhat tedious, somewhat boring, so as not to be distracting, but which would give them some physical activity that contributed to the maintenance of the school while we were attempting to listen; two, taking walks outside, away from school, as a means of creating a listening environment, but again to give them physical activity; and three, just sitting in the classroom listening, but without any physical activity. All of these ways of using listening were to be undertaken in silence: no conversing student to student, nor student to instructor. The reactions to the proposal ranged from disbelief to curiousity.

Bringing each group to this point required all of the first and part of the second two-mod sessions (each mod was 22 minutes long).

As another means by which each group could get a feel for the idea of self-exploration, the balance of the second session was devoted to the following: three pairs of objects - two brooms, two cups, and two sheets of paper - were passed around the group to be examined by them (by touch and by sight). One of each of the pairs was handmade. One of the brooms had been made in Bangkok, Thailand; one of the sheets of paper had been made in a mountain community in Japan; and one of the cups had been made by a potter near Flathead Lake in western Montana. The other items were all factory-produced.

After the students had an opportunity to examine the objects, they were asked to describe what they had seen, what they had experienced, and what, if any, differences existed between members of a pair of objects. The purpose here was to expand their minds and for each of them to discover what it was they were really experiencing in relation to these objects. Thus, I tried to avoid saying anything that would come across as interpreting for them. It was important for this to be their experience, their perception of reality. For, as Piaget indicates, "If... a child is allowed to experiment for himself, he makes his own discoveries. Actually what many people think of as understanding is merely an ability to repeat the right answer to the question. But to comprehend is to invent, not just to repeat" (1972, March, 27).

Predictable initial reactions related to color, shape, size, and possible costs. At a deeper level, comments such as the following were made: "Some of them were made by hand;" "I like the looks and the feel of the handmade objects;" "It must have taken more time to make those things" (the handmade objects). They also began seeing a greater affinity of the handmade objects with nature, of experiencing a "good feeling" in relation to some of the objects, and of sensing something of the craftsman himself being extended beyond himself into the object he had made. What was hoped her was they would sense that the beauty we were experiencing from the handmade objects was in their relation to their being an extension of human personality.

It was also at this time that the idea of a "log book" was introduced, in which each student was to write down the date and the activity on one page, and then to write down his feelings

or reactions in relation to what he experienced on the opposite page.

The third, fourth, and fifth sessions involved either working in silence or walking in silence. The work consisted of washing seats in the auditorium, washing walls or desks in the classrooms. In order to avoid associating this work with that done as "discipline" or "detention" through the Assistant Principal, a discussion was held concerning the meaning of chores as they are done within the home, the rationale for their own participation in them, and the extent to which students ought also to assume similar responsibility for their school, including the need to look at the ways in which the students might help in keeping up their own school. Incidently, some students later commented on how they enjoyed the washing and scrubbing.

The walk in silence was done with the students looking towards the ground, about six feet in front of them, trying not to daydream or play with ideas (teasing them) as they came into their consciousness. Rather, they were encouraged to let themselves be open to the free-flowing of the deeper spirit within them. (The same approach was also used in the work experiences.) Half-way through the walk we took a 5-minute "talking break" and then walked back to school in silence.

The final session for each group was spent as follows: first, a brisk walk was taken outside, around the school building, as a means of awakening them; and second, they were asked to sit down at their desks in silence. Their posture, however, was to follow a particular pattern: both feet flat on the floor; backs straight; chin tucked in; eyes focused on a spot on the floor a few feet in

front of them, half-opened (opened to the world about them and opened unto themselves); hands in their laps, the palm of one hand facing inward on the palm of the other, with the tips of the thumbs touching; and their breathing regulated, through the nose, slowly, naturally, pushing the diaphragm down. The sitting and listening was about 12-15 minutes in length, depending upon the group. It had not been anticipated a group of seventh-grade students would be able to sit in silence this way for that length of time, without movement, but they did.

After the last session, individual interviews were held with each student. While only one student out of about 70 found the whole experience "stupid" and resented having had to go through it, the rest of the students did not object to it and expressed some of the following reactions: indifference; "that was dumb" (just sitting in silence); "it was fun;" and "this was the first time in my life where I didn't have to do something or have to worry about time. I could really listen to myself."

2. Procedure for the Fourth Quarter Research Study. On the basis of the experience of the third quarter, it was decided that during the fourth quarter the program of listening would be continued; however, this time, rather than working with each of the groups for just one-third of the quarter, the same group would be worked with for the whole quarter, and then an attempt would be made to assess if there was any difference in their learning as a result of the experience of meditation.

With the availability of education students from Carleton College to assist me, two of the seventh-grade health classes that fourth quarter were divided into three groups of 8 students each.

The sampling procedure was to count off the computerized alphabetical class listing by three: the "one's" became the experimental group; the "two's" became the control group; and the "three's," the remaining 7-8 students, would not be considered as part of the study.

As indicated above, the same approach as had been used during the previous quarter would be followed here except that it would be extended for the length of the quarter. Thus, only 8 students from each of two classes would have the opportunity to experience "listening." The college students, working only with the other groups, were instructed to involve the control group in any activity they felt would be meaningful as long as it didn't contain elements similar to that with which the experimental group would be involved.

There was one other modification of the procedure from that of the previous quarter. A personal interview was held with each student in the experimental group early in the quarter, as well as at the end, in order to ensure their understanding of the process as well as to answer any questions or to deal with any apprehensions they might have had.

The first session was used primarily to give the pre-test (to be described below) to both the experimental group and the control group. Following the pre-test, the groups were separated and the students in the experimental group were introduced to the program of listening (following the pattern described earlier in this paper).

Depending upon the day, the weather, the mood of the students, and what I perceived my needs to be, we alternated between

"walking and listening," "working and listening," and "sitting and listening" - always maintaining silence during each activity.

At the end of the quarter a conference was held with each student in oder to assess their reactions to the program. The use of the log books was also verified. Incidently, the students were encouraged to practice the listening activities outside of school as well as during the two days each week in which they would be formally structured. During the last week of the quarter, the post-test, conducted in the same manner as the pre-test, was given. Then, six months later, during November, 1972, a second post-test was given, again following the same pattern as had been used previously. The results of both the pre-test and the post-tests were compared for the experimental group, and they were compared for the control group.

The Selection of an Instrument

In order to try to assess changes in "attentiveness to learning," it was felt that some type of a rote memory task would be helpful. Wanting something that would be simple to use and relevant to their experience, 20 objects from around the house were selected, objects it was felt the students would be familiar with. They are as follows:

tooth brush
paper clip
ping pong ball
fingernail clipper
Christmas tree light bulb
badge
piece of candy
several sheets of toilet paper
lipstick tube
spoon (plastic)
ball-point pen
carrot
rubber eraser
envelope
hairpin
jackknife
safety-pin
masking tape
corncob pipe
button

The test was given as follows: the objects were placed on a tray and the students were allowed 15 seconds to look at them. They were then given 2½ minutes to write down all of the objects they could remember. The post-tests were conducted in the same manner, and the procedure was the same for the experimental group and for the control group.

Chapter Five

RESULTS

The results of the post-test at the conclusion of the fourth quarter were compared with those from the pre-test for the experimental group, see Table 1, and for the control group, see Table 2. The differences for each student are also listed. The numbers in column I and in column II represent the number of objects correctly recalled out of the 20 objects on the tray.

Table 1

A Comparison of the Pre- and Post-Test Results for the Experimental Group

Student	I Pre-Test	II Post-Test	Difference
A	8	10	+2
B	12	9	-3
C	8	10	+2
D	5	8	+3
E	11	11	0
F	11	12	+1
G	9	10	+1
H	12	9	-3
I	9	13	+4
J	5	12	+7
K	9	12	+3
L	9	15	+6
M	12	16	+4
N	12	11	-1
O	6	10	+4
P	6	11	+5

For the experimental group, 12 out of the 16 students showed a gain, one showed no gain, and 3 showed a loss. The mean for the number of objects recalled at the pre-test was computed to be 9.0; whereas the mean for the number of objects recalled at

the post-test was computed to be 11.2, or an average gain of 2.2 objects.

Table 2

A Comparison of the Pre- and Post-Test Results for the Control Group

Student	I Pre-Test	II Post-Test	Difference
A	10	7	-3
B	10	13	+3
C	12	12	0
D	8	9	+1
E	12	12	0
F	11	10	-1
G	8	8	0
H	7	8	+1
I	13	11	-2
J	7	10	+3
K	6	12	+6
L	4	7	+3
M	11	11	0
N	10	9	-1
O	8	11	+3
P	12	9	-3

With respect to the control group it will be seen that 7 out of the 16 students showed a gain, 4 showed no gain, and 5 showed a loss. The mean for the number of objects recalled for this group on the pre-test was computed to be 9.3; whereas the mean for the number of objects recalled at the post-test was computed to be 9.9, or an average gain of 0.6 objects.

With the data from the first post-test for each group, the writer set out to test the following null hypotheses: (1) the means for the pre-test and the post-test for the experimental group will be the same; and (2) the means for the pre-test and the post-test for the control group will be the same.

Using the t-test, the differences between means for the experimental group was found to be significant at the .01 level, thus the null hypothesis (1) was rejected,

Again, using the t-test for the differences between means for the control group no significant difference was found, thus the null hypothesis (2) was not rejected,

As long as the meditation program was continued, it was suspected the experimental group would show a significant gain in the number of objects recalled on the rote memory test (obviously, however, limits would be reached). By the same token it was suspected that were the meditation program terminated, in time the gains exhibited by both groups would essentially parallel each other. In order to test this out, six months after discontinuing the meditation program both groups were tested again.

Table 3 shows the number of objects recalled during the immediate post-test and at the six-month post-test for the experimental group. Table 4 shows the results for the control group. The column labeled "II" represents the immediate post-test, and the column labeled "III" represents the six-month post-test. The differences are also shown.

It will be noted that one of the students from the experimental group and two of the students from the control group are missing from the six-month post-test. These students had moved away from the school district during the previous summer.

For the experimental group, 7 out of the 15 students showed a loss during the six month interval after the first post-test. Two of the students showed no gain, and six of the students showed a gain. The mean for the number of objects recalled on the six-month

post-test was 10.9, as opposed to 11.2 at the first post-test, or an average loss of 0.3 objects.

Table 3

A Comparison of the Post-Tests for the Experimental Group

Student	II Post-Test$_1$	III Post-Test$_2$	Difference
A	10	9	-1
B	9		
C	10	12	+2
D	8	8	0
E	11	10	-1
F	12	15	+3
G	10	10	0
H	9	12	+3
I	13	9	-4
J	12	8	-4
K	12	14	+2
L	15	10	-5
M	16	12	-4
N	11	13	+2
O	10	9	-1
P	11	12	+1

With respect to the control group (see Table 4) for the post-tests comparison, 10 of the 14 students showed a gain after the six month interval, 3 of them showed no gain, and one of them showed a loss. The mean for the number of objects recalled on the six-month post-test was 11.1, as opposed to a mean of 9.9 on the first post-test, or an average gain of 1.2 objects.

Using the t-test, no significant differences were found between the post-tests mean (between Post-Test$_1$ and Post-Test$_2$) for either the experimental group or the control group.

For a comparison of the three sets of means (Pre-Test, Post-Test$_1$, and Post-Test$_2$) for both the experimental group and

Table 4

A Comparison of the Post-Tests for the Control Group

Student	II Post-Test$_1$	III Post-Test$_2$	Difference
A	7	11	+4
B	13	13	0
C	12		
D	9	10	+1
E	12	14	+2
F	10	13	+3
G	8	8	0
H	8	9	+1
I	11	13	+2
J	10	11	+1
K	12	9	-3
L	7	11	+4
M	11		
N	9	10	+1
O	11	11	0
P	9	12	+3

and the control group, see Table 5 below.

Table 5

A Comparison of the Means for the Pre-Test and the Post-Tests for the Experimental Group and the Control Group

Group	I Pre-Test	II Post-Test$_1$	III Post-Test$_2$
Experimental	9.0	11.2	10.9
Control	9.3	9.9	11.1

Figure 1, below, portrays the mean values from Table 5. It will be noted that the gain for the control group from the pre-test to the first post-test and then to the six-month post-test is a steady, progressive one. On the other hand, the experimental group shows a sharp increase during the meditation program and simply maintains that gain over the six months interval following termina-

tion of the meditation program (the mean loss of 0.3 objects between the two post-tests, as noted above, is statistically insignificant). Actually, a comparison of the pre-test means with just the six-month post-test means for both groups (see figure 1) suggests that the gains for both groups paralleled each other. The pre-test mean for the experimental group was .3 below that of the control group. Similarly, the six-month post-test mean for the experimental group was .2 below that of the control group.

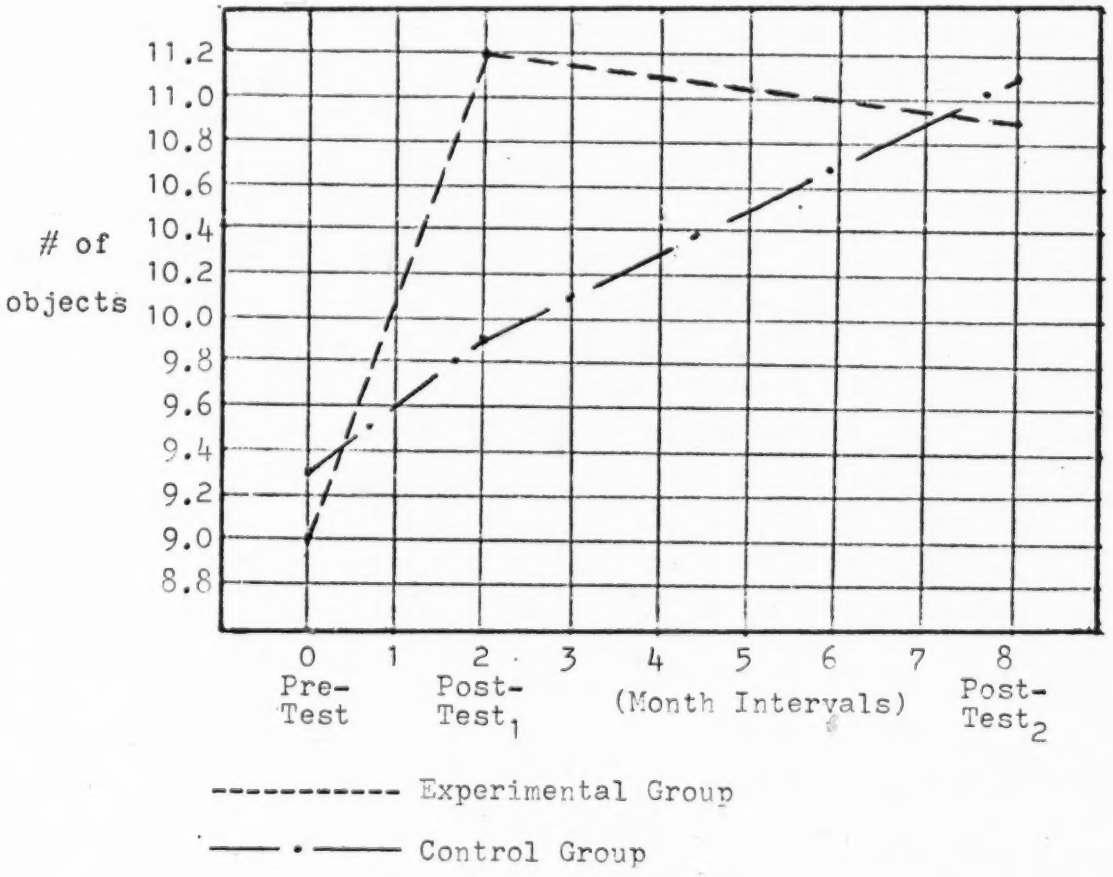

Fig. 1. Means for the objects recalled at the Pre-Test and the Post-Tests for the Experimental Group and the Control Group.

Chapter Six

DISCUSSION

As indicated earlier, the response to the meditation program during the third quarter had been such that there seemed to be no question but to continue the program during the fourth quarter. Additionally, the question of the possible relationship of meditation to attentiveness to learning suggested that the fourth quarter would be an appropriate time to test it.

The results of the fourth quarter experience seem to indicate, at least with the students under consideration, that meditation increases attentiveness to learning. The experimental group exhibited a significant increase in the number of objects recalled between the pre-test and the first post-test on a rote memory task. The only variable that can be identified as contributing to this increase was the meditation program to which the experimental group had been exposed.

It must be remembered that the group of sixteen students involved in the meditation program was a captive audience. They were required to have health that quarter. They were not given a choice of either backing out of or staying in the program. They had to go through the meditation experience. Seen from this standpoint the results are all the more significant. Meditation is a highly personal experience. It is not something in which one suggests, let alone forces, that another participate. It is something an individual must personally desire. And yet, the increase in the number of objects recalled for this group was significant at the .01 level on the first post-test.

Moreover, the results from the second post-test suggests that for the increase in learning to continue, the practice must also continue. After that six-month post-test, each of the students in the experimental group was asked if he or she had continued the "listening" program on their own during the time the meditation program had been discontinued. Three of them said they may have done so occasionally, but that it had not been a conscious attempt to continue the program. The other 12 said they had not. Apparently, then, the two months on a twice-a-week basis was not long enough for them to internalize the practice to which they had been exposed, apart from their own desires.

Although Figure 1 would suggest the Carleton College students who worked with the control group had little or no effect on their performance on the rote memory task, as the rate of increase over the eight-month period seems fairly steady. An attempt was made to assess their feelings, though, concerning their involvement with the Carleton students. Half of the control group was asked to evaluate their "instructors." The students were highly pleased, indicating the experience had been fun, that the fact that their instructors were closer to their age than their regular teachers made it easier to relate to them, and that they felt the Carleton students "really understood us."

The experimental group was also asked to give a written evaluation of their experience. They, as well as the control group, had been made aware at the beginning of the quarter that they would not be graded for the programs, and they were encouraged to be as honest as possible in their written evaluations. Two of the sixteen students did not turn in their written evaluations. The other 14

had general reactions to the program as well as reactions to specific aspects of it. As to the specific aspects of the program, two of the students said they "enjoyed" the working and listening and "had fun" doing it. Three of them said the walking and listening was "fun," one of them commenting "the quiet walks... hit me as being a lot of fun." The sitting and listening was the only part of the program that drew some negative reactions. One student said it was "hard," one said it was "boring," two of them said they "didn't like it," one said she "hated it," and one said it was "tiring."

As to the general reactions, one student said it was different," three said it was "interesting," and six of them said it was "fun." One of the students also indicated he hoped it would be continued the following year. Another student said "What we did helped me think of things. Helped me sort them out and solve them."

An interesting, unsettling, provocative element that turned up, quite by accident, relates to assessment (formal testing) conducted within the classroom, apart from the need level or anxiety level of those being assessed. There were three students who showed a loss in the number of objects recalled at that first post-test from the experimental group. One of them, student H (see Tables 1 and 3), went from 12 objects recalled on the pre-test to 9 on the first post-test, and then went back to 12 objects recalled on the second post-test. This seemed surprising at the time the loss had been noticed as this student had shown interest in the program and in what the group had been doing. In reflecting upon this later, her comments made at the time of the first post-testing, overlooked at the time, suddenly became clear. When it was indicated the control group would be taken first for the post-test, this student said

she had to leave in a few minutes for a dental appointment and wondered what to do about taking the test. As she seemed somewhat concerned at the time, she was given permission to take the test with that group. On the way to where the testing would be done she stated she did not like going to the dentist, "even if it is only for a check-up." After the control group had finished the test, on the way back to the classroom, the girl commented again "I sure don't like going to the dentist." What had been overlooked at the time was her heightened anxiety level because of the dental appointment, and thus it seems reasonable to conclude that this interfered with her performance on the first post-test.

Obviously, this is a matter of conjecture. Never-the-less, this raises questions concerning the way educators arrange the learning sequence (including assessment) for the "group" as opposed to "persons," for their convenience, structuring it apart from readiness in terms of the students' emotional set.

With respect to unusual gains and losses for the control group, only one student showed a gain of more than 3 objects recalled at that first post-test. Student K (see Table 2) gained 6 objects. She was also the only student in the control group who showed a loss (-3) on the second post-test (see Table 4). This suggests something had been operating to affect her emotional set, either before or at the time of the first post-test, which contributed to her greater recall at that post-test. This, of course, is an empirical question. It would seem, though, that these two cases give support to the caution frequently recommended in mental ability measurement in not relying upon single test results.

Chapter Seven

CONCLUSIONS

The results of a single study of this nature, obviously, are inconclusive. It would have been helpful to have extended the present study, to have again involved the experimental group in the meditation experience for a longer period of time, perhaps for six months the second time. If there was again a significant gain in the number of objects identified or recalled, on the part of the experimental group, it would lend greater weight to the above study.

It would also be helpful to have a longitudinal study of several years, assessing achievement and attitudinal changes as a result of the meditative experience.

Another approach might be that of contrasting the effects of the meditative experience, with respect to increases in attentiveness to learning, amongst volunteer subjects along with the "captive audience" approach as used in this study.

In spite of whatever limitations may have existed in the present study, though, it would seem apparent both on the observable as well as on the demonstrable levels that something was occuring. Meditation seems to be positively correlated with increases in learning. If this is true, then the implications of this study for education are far-reaching, with respect to both the student and the teacher.

We are troubled in education today, and thus many proposals for change continue to be articulated. However, "It is a dangerous temptation to try to replace one worn out structure with another, more attractive one, and forget that what is needed is not another

structure, but a different way of thinking and being" (Kohl: 1969, 2). Therefore,

> if we adopt the common-sense position that the principal objective of any activity is to promote the fulfillment of the individuals engaged in and influenced by that activity, then the real goal of education is seen to encompass nothing less than the fulfillment of the student" ("fulfillment implies the actualization of the full potentialities for growth latent in the individual") (Levine: 1972, Dec., 231).

Thus, at the junior high level of education, if it is deemed important that the student be more than open and responsive to new ideas, that he be fulfilled as a person, then our "different way of thinking and being" may be that the student is to be helped to be able to be in touch with himself, for students "at ease inside can be expected to respond more spontaneously and creatively to a learning environment" (Levine: 1972, Dec., 234). There may be many paths towards increasing self-awareness and thus to a greater awareness of one's external environment, to the world in which the student finds himself. Meditation, it would seem, aids the student in discovering himself, and as a secondary benefit, helps him in working together with the teacher in creating a more viable learning experience.

We are all aware of the student who enters first grade alive, creative, full of curiousity, only to find that by the time he has reached junior high, his curiousity has been dulled, his creativity seems lost, and he experiences school as something he is forced to live with. Students need to be freed, to become themselves. The practice of meditation, as an ongoing part of the school experience, may help to accomplish this.

Students, of course, do not learn in a vacuum. They are involved day after day with a variety of adult models to whom they

have to relate. To be sure, the kind of modeling they experience is important, but it is not crucial. The extent to which the child is in touch with himself is what is crucial. Never-the-less, the child's teacher(s) may be a catalyst. He may help to speed up the learning process, but then again he may act to hinder it. Therefore, he too needs to be considered. Thus, what Lesh says concerning the counselor may also apply to the teacher: what is desired is "to bring the counselor (teacher) to be himself; to be open to the experience of the client (student). One cannot be empathic with another if he does not even know what is own experience is" (1970, 10, 1, 43). Thus, to be sensitive and perceptive to students' needs, the teacher must be in touch with himself. It, therefore, would seem appropriate that the meditation experience be available, as an option, at the teacher training institutions as a part of the "training" that needs to occur in the affective domain.

This paper has been written in the philosophy that education is a facilitative process, that educators are "enablers," not "imparters." If our goal as educators is to assist people in self-actualization, in becoming all they are capable of becoming, then the practice of meditation as "the doorway to wholeness" (Moyer: 1965, 22, 2) ought to be an inherent part of that process.

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